

REMARKS

Applicant respectfully requests further examination and reconsideration in view of the arguments set forth fully below. Claims 1-23 were previously pending in this Application. Within the Office Action, Claims 1-23 have been rejected. By the above amendment, Claims 1, 3-5, 7, 8, 10-14, 16, 18, 21 and 23 have been amended and Claims 17 and 22 have been canceled. Accordingly, Claims 1-16, 18-21 and 23 are now pending in the application.

The Applicant's attorney would like to thank Examiner Fish and Examiner Faile for their time and courteousness during the telephone interview on Thursday, March 24, 2005. During the interview, the differences between Kawaguchi and the present invention were discussed. Specifically, it was discussed that Kawaguchi does not teach a power switch which provides power to components within the receiver in direct response to receiving a wake-up signal.

Objections

Within the Office Action, Claim 1 has been objected to because of the term "the tuner input terminal" in line 7. By the above amendment, this term has been deleted on line 7 of Claim 1.

Rejections Under 35 U.S.C. § 102

Within the Office Action, Claims 21-23 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,271,893 to Kawaguchi et al. (hereinafter "Kawaguchi"). Kawaguchi teaches a digital television broadcasting system. Kawaguchi teaches that a broadcasting system 1 includes a digital TV transmitter 2 for transmitting a transport stream from a satellite space station 3 to a multiplicity of digital TV receivers 4. [Kawaguchi, col. 3, lines 30-43, Figure 1] Kawaguchi also teaches a second transmission media 5 other than the satellite 3 to inform the TV receivers 4 of irregular broadcasts. [Kawaguchi, col. 3, lines 30-43, Figure 1] Kawaguchi teaches that the second transmission media 5 may be any transmission media which is other than the broadcasting satellite 3 and which causes the power consumption in each TV receiver 4 during waiting for a communication from the earth station 2 to be less than the power consumption in each TV receiver 4 during receiving the program information without using program contents. [Kawaguchi, col. 3, lines 43-50] Kawaguchi teaches maintaining an alteration time list 340, at the transmitter 2, and at each TV receiver 4, an update time list. [Kawaguchi, col. 7, lines 6-23] Kawaguchi teaches that at the update time, the switch 231 is turned on. [Kawaguchi, col. 7, lines 24-39, Figure 7A] The heading of Figure 7A is "Program

Information Collecting Operation At An Update Time.” Kawaguchi does not teach a means for monitoring a broadcast communication channel for a wake-up instruction with the receiver in the power-off condition. Kawaguchi teaches that the switch 231 is turned on at the update time, not in direct response to a wake-up signal.

In contrast to the teachings of Kawaguchi, the low-power broadcast receiver of the presently claimed invention is directed to a broadcast receiver capable of operating in a power-saving standby mode while retaining the ability to receive broadcast program, software and firmware updates. The receivers have a broadcast interface that incorporates an update sensor adapted to sense broadcast updates. The receiver includes a wake-up switch that deprives the most power hungry circuits of power in the standby mode. The update sensor, remains active at all times. If the receiver receives a wake-up instruction in the standby mode, then the update sensor closes the wake-up switch to provide power to those components needed to receive the update in direct response to the wake-up instruction. As described above, Kawaguchi does not teach a means for monitoring a broadcast communication channel for a wake-up instruction with the receiver in the power-off condition, wherein the means for monitoring the broadcast communication channel includes a power switch for providing power to a processor in direct response to the wake-up instruction. Kawaguchi teaches that the switch 231 is turned on at the update time, not in direct response to a wake-up signal.

The independent Claim 21 is directed to a broadcast receiver. The broadcast receiver of Claim 21 comprises means for monitoring a user-input device for a power-on instruction, display means for indicating a power-on condition for the receiver in response to the power-on instruction, means for monitoring the user-input device for a power-off instruction, means responsive to the power-off instruction for indicating a power-off condition for the receiver and means for monitoring a broadcast communication channel for a wake-up instruction with the receiver in the power-off condition, wherein the means for monitoring the broadcast communication channel includes a power switch for providing power to a processor in direct response to the wake-up instruction. As described above, Kawaguchi does not teach a means for monitoring a broadcast communication channel for a wake-up instruction with the receiver in the power-off condition, wherein the means for monitoring the broadcast communication channel includes a power switch for providing power to a processor in direct response to the wake-up instruction. Kawaguchi teaches that the switch 231 is turned on at the update time, not in direct response to a wake-up signal. For at least these reasons, the independent Claim 21 is allowable over the teachings of Kawaguchi.

By the above amendment, Claim 22 has been canceled. Claim 23 is dependent on the independent Claim 21. As described above, the independent Claim 21 is allowable over the teachings of Kawaguchi. Accordingly, Claim 23 is also allowable as being dependent on an allowable base claim.

Rejections Under 35 U.S.C. § 103

Within the Office Action, Claims 1, 2, 4-9, 11 and 13-15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,658,231 to Nakatsuyama et al. (hereinafter "Nakatsuyama") in view of Kawaguchi. Nakatsuyama teaches a receiver for user-demand information and entertainment system using wide area digital broadcast. Nakatsuyama teaches that the information system provides selected information to individual users through a receiver. [Nakatsuyama, Abstract] The receiver detects an identifier which includes time and tuning information, which is used to receive, download and store the user's selected program. [Nakatsuyama, Abstract] Nakatsuyama further teaches that the identifier includes a time and channel component that identifies the appropriate channel and time to which the receiver tunes to receive the index data associated with the receiver's identifier, allowing the receiver to operate in a low power mode. [Nakatsuyama, col. 7, lines 32-39] Accordingly, Nakatsuyama also teaches that the low power mode is achieved by earlier sending time information, which allows the receiver to operate in low power mode until the appropriate time. Nakatsuyama does not teach an update sensor which operates a wake-up switch in direct response to a wake-up instruction. Nakatsuyama teaches that the receiver remains in the low power mode until the appropriate time.

Kawaguchi teaches a digital television broadcasting system. Kawaguchi teaches that a broadcasting system 1 includes a digital TV transmitter 2 for transmitting a transport stream from a satellite space station 3 to a multiplicity of digital TV receivers 4. [Kawaguchi, col. 3, lines 30-43, Figure 1] Kawaguchi also teaches a second transmission media 5 other than the satellite 3 to inform the TV receivers 4 of irregular broadcasts. [Kawaguchi, col. 3, lines 30-43, Figure 1] Kawaguchi teaches that the second transmission media 5 may be any transmission media which is other than the broadcasting satellite 3 and which causes the power consumption in each TV receiver 4 during waiting for a communication from the earth station 2 to be less than the power consumption in each TV receiver 4 during receiving the program information without using program contents. [Kawaguchi, col. 3, lines 43-50] Kawaguchi teaches maintaining an alteration time list 340 and at each TV receiver 4, an update time list. [Kawaguchi, col. 7, lines 6-23] Kawaguchi teaches that at the update time, the switch 231 is turned on. [Kawaguchi, col. 7, lines 24-39, Figure 7A] Kawaguchi does not teach a means for monitoring a broadcast

communication channel for a wake-up instruction with the receiver in the power-off condition. Kawaguchi teaches that the switch 231 is turned on at the update time, not in direct response to a wake-up signal.

There is no hint, teaching or suggestion to warrant the combination of Nakatsuyama and Kawaguchi. As discussed above, Nakatsuyama teaches sending preselected user-specific information to a user's personal receiver. [Nakatsuyama, col. 2, lines 3-11] Kawaguchi contrarily teaches a digital television broadcasting system which transmits a transport stream to receivers. [Kawaguchi, col. 2, lines 11-13] Accordingly, there is no hint, teaching or suggestion to warrant the combination of the user-specific transmission of Nakatsuyama with the digital television broadcasting system of Kawaguchi. It is simply not permissible to conclude that this is an obvious combination without a hint, teaching or suggestion to warrant the combination.

It is well settled that to establish a *prima facie* case of obviousness, three basic criteria must be met:

- 1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
- 2) there must be a reasonable expectation of success; and
- 3) the prior art reference, or references, must teach or suggest all the claim limitations. MPEP § 2143.

The burden of establishing a *prima facie* case of obviousness based on the teachings of Nakatsuyama and Kawaguchi has not been met within the Office Action.

There is no motivation to combine the teachings of Nakatsuyama and Kawaguchi. As discussed above, Nakatsuyama teaches sending preselected user-specific information to a user's personal receiver. Kawaguchi teaches a digital television broadcasting system. A person skilled in the art would have no motivation to combine the teachings of Kawaguchi with the teachings of Nakatsuyama. Accordingly, the rejection of Claims 1, 2, 4-9, 11 and 13-15 based on the combination of Nakatsuyama and Kawaguchi, is not proper and should be withdrawn.

Even if considered proper, the combination of Nakatsuyama and Kawaguchi does not teach a low-power broadcast receiver which includes a wake-up sensor and a wake-up switch as claimed within the present claims. As described above, Nakatsuyama does not teach a wake-up sensor which sends a wake-up signal to a wake-up switch in direct response to a first selected signal. Nakatsuyama teaches that the receiver remains in the low power mode until the appropriate time. As also described above, Kawaguchi does not teach a wake-up sensor which sends a wake-up signal to a wake-up switch in direct response to a first selected signal.

Kawaguchi teaches that the switch 231 is turned on at the update time, not in direct response to a wake-up signal. Accordingly, neither Nakatsuyama, Kawaguchi nor their combination teach a wake-up sensor which sends a wake-up signal to a wake-up switch in direct response to a first selected signal.

In contrast to the teachings of Nakatsuyama, Kawaguchi and their combination, the low-power broadcast receiver of the presently claimed invention is directed to a broadcast receiver capable of operating in a power-saving standby mode while retaining the ability to receive broadcast program, software and firmware updates. The receiver has a broadcast interface that incorporates an update sensor adapted to sense broadcast updates. The receiver includes a wake-up switch that deprives the most power hungry circuits of power in the standby mode. The update sensor, remains active at all times. If the receiver receives a wake-up instruction in the standby mode, then the update sensor closes the wake-up switch to provide power to those components needed to receive the update. As described above, neither Nakatsuyama, Kawaguchi nor their combination teach a wake-up sensor which sends a wake-up signal to a wake-up switch in direct response to a first selected signal.

The independent Claim 1 is directed to a broadcast receiver. The broadcast receiver of Claim 1 comprises a power supply having a power-supply output terminal and a broadcast interface circuit. The broadcast interface circuit includes an interface-circuit input terminal adapted to receive a plurality of broadcast communications signals, each signal modulated about a selected carrier frequency, a tuner having a tuner input terminal coupled to the interface circuit input terminal, wherein the tuner selects one of the signals and provides the selected signal on a tuner output terminal, a wake-up sensor having a sensor input terminal coupled to the interface circuit input terminal and a wake-up sensor output terminal, wherein the wake-up sensor produces a wake-up signal on the wake-up sensor output terminal directly in response to receiving a first selected signal and a wake-up switch having a wake-up switch input terminal coupled to the power-supply output terminal, a wake-up switch output terminal, and a wake-up switch control terminal coupled to the wake-up sensor output terminal to receive the wake-up signal, wherein the wake-up switch is closed in direct response to receiving the wake-up signal thereby providing power from the power-supply output terminal to the wake-up switch output terminal. As described above, the combination of Nakatsuyama and Kawaguchi is not proper. As also described above, neither Nakatsuyama, Kawaguchi nor their combination teach a wake-up sensor which sends a wake-up signal to a wake-up switch in response to a first selected signal, wherein the wake-up switch is closed in direct response to receiving the wake-up signal. For at

least these reasons, the independent Claim 1 is allowable over the teachings of Nakatsuyama, Kawaguchi and their combination.

Claims 2 and 4-7 are all dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over the teachings of Nakatsuyama, Kawaguchi and their combination. Accordingly, Claims 2 and 4-7 are all also allowable as being dependent on an allowable base claim.

The independent Claim 8 is directed to a broadcast communication network. The broadcast communication network of Claim 8 comprises a broadcast head-end adapted to broadcast a plurality of signals about a corresponding plurality of carrier frequencies, the signals including an occasional wake-up instruction and a plurality of receivers adapted to receive the plurality of signals. It is specified in Claim 8 that each receiver includes a power supply having a power-supply output terminal and a broadcast interface circuit. The broadcast interface circuit includes an interface-circuit input terminal adapted to receive a plurality of broadcast communications signals, each signal modulated about a selected carrier frequency, a wake-up sensor having a sensor input terminal coupled to the interface circuit input terminal and a wake-up sensor output terminal, wherein the wake-up sensor produces a wake-up signal on the wake-up sensor output terminal directly in response to receiving a first selected signal and a wake-up switch having a wake-up switch input terminal coupled to the power-supply output terminal, a wake-up switch output terminal, and a wake-up switch control terminal coupled to the wake-up sensor output terminal to receive the wake-up signal, wherein the wake-up switch is closed in direct response to receiving the wake-up signal thereby providing power from the power-supply output terminal to the wake-up switch output terminal. As described above, the combination of Nakatsuyama and Kawaguchi is not proper. As also described above, neither Nakatsuyama, Kawaguchi nor their combination teach a wake-up sensor which sends a wake-up signal to a wake-up switch directly in response to a first selected signal, wherein the wake-up switch is closed in direct response to receiving the wake-up signal. For at least these reasons, the independent Claim 8 is allowable over the teachings of Nakatsuyama, Kawaguchi and their combination.

Claims 9, 11 and 13-15 are all dependent on the independent Claim 8. As described above, the independent Claim 8 is allowable over the teachings of Nakatsuyama, Kawaguchi and their combination. Accordingly, Claims 9, 11 and 13-15 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 16-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawaguchi in view of U.S. Patent No. 6,054,981 to Kimoto et al.

(hereinafter “Kimoto”). It is recognized within the Office Action that Kawaguchi does not teach an indicator for indicating various power modes. Kimoto appears to be cited for this proposition. However, as described above, Kawaguchi does not teach monitoring, with the receiver in the standby condition, a broadcast communication channel for a wake-up instruction. Kimoto also does not teach monitoring, with the receiver in the standby condition, a broadcast communication channel for a wake-up instruction. Accordingly, neither Kawaguchi, Kimoto nor their combination teach monitoring, with the receiver in the standby condition, a broadcast communication channel for a wake-up instruction.

The independent Claim 16 is directed to a method of reducing power usage in a broadcast receiver. The method of Claim 16 comprises monitoring, in a standby mode, a user-input device for a power-on instruction, indicating a power-on condition for the receiver in response to the power-on instruction, monitoring the user-input device for a power-off instruction, indicating a standby condition for the receiver in response to the power-off instruction, monitoring, with the receiver in the standby condition, a broadcast communication channel for a wake-up instruction and providing power to a first portion of the receiver and indicating a standby condition for the receiver while receiving a receiver update, in direct response to receiving the wake-up instruction. As described above, neither Kawaguchi, Kimoto nor their combination teach monitoring, with the receiver in the standby condition, a broadcast communication channel for a wake-up instruction and providing power to a first portion of the receiver and indicating a standby condition for the receiver while receiving a receiver update, in direct response to receiving the wake-up instruction. For at least these reasons, the independent Claim 16 is allowable over the teachings of Kawaguchi, Kimoto and their combination.

Claim 17 has been canceled by the above amendment. Claims 18-20 are all dependent on the independent Claim 16. As described above, the independent Claim 16 is allowable over the teachings of Kawaguchi, Kimoto and their combination. Accordingly, Claims 18-20 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 3, 10 and 12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakatsuyama, Kawaguchi and further in view of U.S. Patent Publication No. 2002/0073423 to Krakirian (hereinafter “Krakirian”). Claim 3 is dependent on the independent Claim 1. Claims 10 and 12 are both dependent on the independent Claim 8. As described above, the independent Claims 1 and 8 are both allowable over the teachings of Nakatsuyama, Kawaguchi and their combination. Accordingly, Claims 3, 10 and 12 are all also allowable as being dependent on an allowable base claim.

For the reasons given above, the applicant respectfully submits that the claims are now in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
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